HHS Public Access

Author manuscript

*Acad Med*. Author manuscript; available in PMC 2021 August 09.

Published in final edited form as:

*Acad Med*. 2015 August ; 90(8): 1077–1083. doi:10.1097/ACM.0000000000000717.

# Considering Context in Academic Medicine: Differences in Demographic and Professional Characteristics and in Research Productivity and Advancement Metrics Across Seven Clinical Departments

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## Abstract

**Purpose—**To understand the disciplinary contexts in which faculty work, the authors examined demographics, professional characteristics, research productivity, and advancement across seven clinical departments at Harvard Medical School (HMS) and nationally.

**Method—**HMS analyses included faculty from seven clinical departments—anesthesiology, medicine, neurology, pediatrics, psychiatry, radiology, and surgery—in May 2011 (N = 7,304). National analyses included faculty at 141 accredited U.S. medical schools in the same seven departments as of December 31, 2011 (N = 91,414). The authors used chi-square and Wilcoxon Mann-Whitney tests to compare departmental characteristics.

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*Other disclosures:* None reported.

*Ethical approval:* Ethical approval was provided by the Harvard University Faculty of Medicine Committee on Human Studies (CHS Study Number M19492-106).

**Results—**Heterogeneity in demographics, professional characteristics, and advancement across departments was observed in HMS and national data. At HMS, psychiatry had the highest percentage of underrepresented minority faculty at 6.6% (75/1,139). In anesthesiology, 24.2% (128/530) of faculty were Asian, while in psychiatry only 7.9% (90/1,139) were ($P < .0001$). Female faculty were the majority in pediatrics and psychiatry, while in surgery 26.3% (172/654) of the faculty were female ($P < .0001$). At HMS, surgery, radiology, and neurology had the shortest median times to promotion and the highest median number of publications, H-index, and second-degree centrality. Neurology also had the highest percentage of faculty that had been principal investigators on a National Institutes of Health funded grant.

**Conclusions—**There were differences in demographics, professional characteristics, and advancement across clinical departments at HMS and nationally. The context in which faculty work, of which department is a proxy, should be accounted for in research on faculty career outcomes and diversity inclusion in academic medicine.

Both how faculty work and the output of their work varies across academic departments. Several studies have found differences in norms related to research, teaching, and the relative amount of time spent by faculty in each area across academic departments, particularly in the humanities and sciences.[1–4] One study found systematic disciplinary differences in factors associated with faculty turnover,[5] while other studies produced mixed findings on the relationship between department and job satisfaction.[6–8] Citation and publication practices have also been shown to vary across and within departments.[9] For example, biology, chemistry, and physics faculty have a higher median H-index (defined below) and higher numbers of publications than do mathematics or engineering faculty, with significant differences within engineering specialties such as civil and electrical.[10] H-index also varies by department within academic medicine.[11] Given these differences, caution is urged in comparing faculty across departments.[12] Simply controlling for department in analyses of multidisciplinary faculty, or extrapolating across departments, may lead to incorrect generalizations.[13] The extent to which these concerns are warranted across academic medicine departments is unclear; this study attempts to shed light on the issue.

There is great variation in how department, as an indicator of context (or environment), has been accounted for in research on faculty workforce development and diversity inclusion in academic medicine. Some studies do not adjust for department at all,[14] and some adjust for the faculty member's role or track (i.e., clinical, research, educator, or administration) instead.[15,16] Others do account for discipline or department but do so in broad categories such as basic sciences, primary care, or surgery.[17–19] Still others have either adjusted for medical specialty[20,21] or compared faculty that were matched on department.[22] These differences in how disciplines or departments are handled in academic medicine research may affect the inferences that are made from the results and how the results are applied in practice. Understanding departmental differences as an indicator of context is important to more fully understand faculty workforce development and diversity inclusion.

Although context is recognized as a contributor to outcomes such as faculty research productivity,[23] disciplinary differences within academic medicine have not been fully investigated, and it is unclear to what extent heterogeneity across departments may

exist. Using data on Harvard Medical School (HMS) faculty and national data from the Association of American Medical Colleges (AAMC) on faculty from 141 accredited U.S. medical schools, we investigated whether demographic characteristics (race, gender, and age), professional characteristics (faculty rank and terminal degree), research productivity metrics (number of publications, H-index, second-degree centrality, and percentage of faculty that had been principal investigator on an National Institutes of Health [NIH]-funded grant), and advancement metrics (time to promotion) differed across seven clinical academic medicine departments.

## Method

We examined data related to faculty demographics, professional characteristics, research productivity, and advancement to get a broad picture of the differences across clinical departments at HMS and nationally. Although we reviewed both HMS and national data to examine context in multiple settings, we did not compare the two sets of data to each other. The study was approved by the Office of Research Subject Protection at HMS.

### Data sources

For HMS faculty, we used data from the Pathways data repository. Pathways includes information on demographic and professional characteristics and advancement from HMS administrative databases, information on research productivity from Harvard Catalyst Profiles (Profiles), and NIH grant awards information from NIH ExPORTER.

Profiles is a publicly available, online directory and social networking tool for Harvard faculty, which automatically imports their publication lists from PubMed.[24, 25] Faculty can log in to Profiles to correct any mistakes made by the automated publication matching process or to add publications not indexed by PubMed. For this study we only used the publications in Profiles that are indexed in PubMed. Based on a data snapshot taken on July 1, 2012, PubMed-indexed publications represent 348,702 (87.1%) of the 400,292 publications in Profiles.[24] As of July 1, 2012, PubMed articles exist on the profile pages of 95.3% of full professors, 95.8% of associate professors, 91.2% of assistant professors, and 70.1% of full-time instructors at HMS.

NIH ExPORTER provides data on NIH grant awards beginning in 1985.[26] Data are only available on principal investigators of awarded grants; no other grant roles (i.e., coinvestigator, consultant) are captured. NIH grant awards were matched to HMS faculty using a disambiguation algorithm created by our team based on name, institution, HMS affiliate institution, grant and appointment dates, and faculty rank; 70.2% of HMS faculty were matched to at least one NIH-funded grant between 1985 and 2011.

We obtained national data on faculty race, gender, rank, and terminal degree according to department as of December 31, 2011, from the AAMC Faculty Roster.[27] The AAMC Faculty Roster collects comprehensive information on the characteristics of paid faculty members at 141 accredited U.S. medical schools. We were able to obtain national data on age and time to promotion through a special request to the AAMC for a snapshot of the AAMC Faculty Roster as of December 31, 2011.[28] The snapshot, which was generated on

March 31, 2013, includes more faculty members than the publicly available data (see below for more information). National data were not available on research productivity metrics such as number of publications, H-index, second-degree centrality, and the percentage of faculty that had been principal investigator on an NIH-funded grant. HMS faculty members are included in the AAMC national data, however HMS and AAMC data are not being compared, and HMS represents less than 8% (7,304/91,414) of the AAMC sample.

## Study populations

Analyses within HMS include faculty across HMS-affiliated hospitals who had a rank of full-time instructor, assistant professor, associate professor, or full professor (N = 7,304) in May 2011 in seven clinical departments: anesthesiology, medicine, neurology, pediatrics, psychiatry, radiology, and surgery. National analyses include full-time faculty (N = 91,414), as of December 31, 2011, at 141 accredited U.S. medical schools in the same seven clinical departments; however, national analyses on race and gender exclude 127 faculty with missing gender data (n = 91,287), and those on age and time to promotion include an additional 1,647 faculty members (n = 93,061), whose information was only available through the specially requested snapshot on the AAMC Faculty Roster.

## Faculty characteristics

**HMS faculty.—**We collected data for HMS faculty in aggregated totals across departments at each of the HMS-affiliated hospitals. We categorized race as underrepresented in medicine (URM; African-American, Hispanic, or American Indian),[29] White, Asian (Asian, Hawaiian, or Pacific Islander), or other/unknown. HMS data on race are collected at affiliated hospitals via the affirmative action form that is submitted with new hire paperwork and is therefore self-reported. We categorized faculty rank as full-time instructor, assistant professor, associate professor, or full professor. We defined terminal degree as the highest-attained educational degree—generally a doctorate—and classified the degrees as medical degree only (MD, MBBS, DO, etc.), doctorate only (PhD, ScD, PsyD, PharmD, EdD), medical degree and doctorate (any combination of listed medical degrees and doctorates), or other/unknown.

We calculated time to promotion as the time from the date of first appointment at a given rank to the date of promotion to the next rank for each faculty member. That is, time to promotion was calculated separately for full-time instructor to assistant professor, assistant professor to associate professor, and associate professor to full professor. Time to promotion was only calculated among faculty with a current appointment at HMS in May 2011 who had experienced a promotion at a given faculty rank. Promotions could have occurred at any time over the faculty member’s career at HMS.

We examined research productivity metrics on the number of publications, H-index, and second-degree centrality through 2011, as well as the percentage of faculty that had been principal investigator on an NIH-funded grant during the time frames 1985–2011 and 2008–2011. These time periods were chosen to capture funding patterns across the entire time frame of available data, as well as more recently. Number of publications was the count of publications on which the faculty member was listed as an author. H-index is a publication

metric that represents the number of publications an author has that have been cited that number of times. For example, an H-index of 10 indicates that an author has 10 publications that have been cited at least 10 times.[30] Degree centrality of a coauthor network is often used to represent potential communication activity and/or visibility.[31] First-degree centrality is the number of direct connections while, second-degree centrality is the number of second-degree (or indirect) connections. Within HMS faculty coauthor networks, we defined each faculty member's second-degree centrality as the number of distinct faculty coauthors at HMS, Harvard School of Public Health, and Harvard School of Dental Medicine who were second-degree connections. In other words, a faculty member's second-degree centrality is the number of coauthors that person's coauthors have.

**National faculty.—**The department characteristics presented are aggregated totals across 141 accredited U.S. medical schools. We used the same categories for race, terminal degree, and faculty rank for national data as we did for HMS data. National data on race are reported to the AAMC by each institution in accordance with its own institutional policies and procedures. We calculated time to promotion as the time from the date of first appointment at a given rank to the date of appointment at the next highest rank among full-time faculty with academic medicine appointments as of December 31, 2011. We included all instances of promotion for each faculty member that occurred in the same department and at the same institution.

### Statistical analysis

For analyses of HMS faculty data, we used aggregate individual-level data to compare percentages or medians of demographic and professional characteristics and of research productivity and advancement metrics across departments. For analyses of national faculty data, we used aggregate, department-level data to compare percentages or medians of race, gender, faculty rank, and terminal degree. Data were not available to conduct significance testing for age or time to promotion variables, and thus no *P* values are presented to compare these characteristics across departments at the national level.

Numbers and percentages are presented for categorical values, and medians with interquartile ranges (IQRs) are presented for continuous variables. Chi-square tests were used for categorical variables and Wilcoxon Mann-Whitney tests for continuous variables. All *P* values are two-sided, and a significance level of .05 was used. All analyses were performed using SAS version 9.3 (SAS Institute Inc., Cary, North Carolina).

## Results

### HMS faculty

At HMS, there were significant differences in the number of faculty in each department, with medicine having the largest number of faculty members (Table 1). The distribution of race, gender, faculty rank, terminal degree, and age each varied significantly by department ($P < .0001$). Across departments, the percentage of URM faculty ranged from 3.3% (n = 16) in neurology to 6.6% (n = 75) in psychiatry. For Asian faculty, the distribution ranged from 7.9% (n = 90) in psychiatry to 24.2% (n = 128) in anesthesiology. There were two

departments where the majority of the faculty was female (pediatrics [51.1%; n = 475] and psychiatry [51.2%; n = 583]), while the lowest percentage of female faculty was in surgery (26.3%; n = 172). Pediatrics had the highest percentage of faculty with the rank of full-time instructor (53.6%; n = 498). Neurology and psychiatry had the lowest percentage of faculty with a medical degree only.

Research productivity metrics also varied by department at HMS (Table 2). Radiology, neurology, and surgery had the highest median number of publications, with 27.0, 23.0, and 23.0, respectively ($P < .0001$), as well as the highest median H-index and second-degree centrality ($P < .0001$). Anesthesiology, pediatrics, and psychiatry had among the lowest median number of publications, H-index, and second-degree centrality. Neurology had the highest percentage of faculty that had been principal investigator on an NIH-funded grant in both of the studied time frames (2008–2011 and 1985–2011), followed by medicine ($P < .0001$). Although median research productivity differences among departments were significantly different, the variance within some of the departments, as indicated by the IQRs, was also large. Radiology had the largest IQR for number of publications (58.0), followed by surgery (57.5). The IQR for second-degree centrality was as large as 701.0 in medicine and 682.5 in surgery. These large IQRs indicate differences among faculty within departments.

For advancement metrics (Table 2), median time to promotion from full-time instructor to assistant professor ($P < .0001$) and from assistant professor to associate professor ($P = .0003$) was significantly different across departments at HMS. The shortest median times to promotion from full-time instructor to assistant professor were observed for surgery (3.4 years), radiology (3.5 years), and neurology (3.8 years). Radiology also had the shortest median time to promotion from assistant professor to associate professor (4.0 years). However, there was no significant difference across departments in median time to promotion from associate professor to full professor ($P = .30$).

## National faculty

Heterogeneity in demographic and professional characteristics across departments was also seen in AAMC national data (Table 3). There was a wide variation in the number of faculty in each department nationally, with medicine having the largest number of faculty. Pediatrics had the highest percentage of URM faculty (8.2%, n = 1,404), and radiology had the highest percentage of Asian faculty (16.4%, n = 1,361). Nationally, pediatrics was the only department that had a majority of female faculty (50.6%, n = 8,625), while surgery (19.9%, n = 2,380) had the lowest percentage of female faculty. The percentage of faculty with a rank of full professor ranged from 14.7% (n = 1,006) in anesthesiology to 26.7% (n = 3,193) in surgery. Psychiatry had the lowest percentage of faculty with a medical degree only (52.6%, n = 4,967) and the highest percentage (36.7%, n = 3,463) with a doctorate only. Median age was similar across departments.

There was some variation in advancement metrics across departments in AAMC national data as well (Table 4). Surgery had the shortest median time to promotion at every rank. For assistant professor to associate professor, median time to promotion ranged from 6.0 years in radiology and surgery to 6.8 years in pediatrics. For associate professor to full professor,

the range was 6.0 years in radiology and surgery to 7.0 years in medicine, pediatrics, and psychiatry.

## Discussion

We observed heterogeneity across departments with respect to demographic and professional characteristics and advancement metrics in HMS data and national data from the AAMC. At HMS, this department heterogeneity extended into research productivity metrics such as median number of publications and the percentage of faculty that were principal investigator on an NIH-funded grant. Although significant differences in productivity metrics were observed across departments at HMS, differences within some departments were also large (as indicated by the IQRs). These differences within departments might be related to subspecialties.

When attempting to understand the experiences and career outcomes of academic medicine faculty, researchers must take the context—operationalized as department in this report—into account. The differences in demographic and professional characteristics we found may affect the experiences and performance of faculty. For example, the experience of being a woman in a department where the majority of faculty are women may be quite different than being a woman in a department where only a quarter of the faculty are women.[32,33] Similar effects may hold for factors such as race, and there are known gender and racial differences in medical school graduates' choice of specialty.[34,35] Faculty who are in departments with a relatively low representation of their own race, gender, age group, or other easily observable characteristic may have different experiences of the organization than those in departments where their group enjoys greater representation.[36] The findings of one study suggest that when individuals have few peers of their own race, gender, or age group in their work setting, they are less likely to view their organization positively, more likely to leave, and less likely to be evaluated positively by supervisors.[37] In another study, the percentage of females within a department was inversely associated with perception of equitable treatment of women and faculty of color. The authors suggest that this is because predominately female departments generally have lower prestige and salaries.[38] Thus, compositional differences in departments may be important factors in understanding faculty turnover and job satisfaction as they may relate to a faculty member's sense of inclusion or exclusion, as well as to their building of collaborations or networks. Understanding demographic composition in departments within academic medicine may help faculty leaders design more effective programs and policies that address faculty career outcomes and improve diversity inclusion. For example, female faculty in surgery might benefit more from programs aimed at networking or creating connections than female faculty in pediatrics due to their underrepresentation in their department. Our findings help pave the way toward achieving this understanding.

There are several important limitations to our study. First, research productivity metrics were based on publication metrics or being principal investigator on an NIH-funded grant. There are other domains that may be important, particularly for faculty not pursuing a research career. Second, our data represent only a single point in time. The characteristics of, and differences between, departments may change over time. It will be important to examine

these patterns with longitudinal data. Doing so will allow a better understanding of the impact of external policies that may affect future student and faculty choice of department. Such policies may have differential effects across demographic groups. Third, due to the disambiguation process necessary to match HMS faculty to PubMed identification numbers and NIH grant awards, faculty with common names, name changes, or publications from when PubMed only used initials were more likely to be unmatched than other faculty. As a result our research productivity metrics may miss more publications and NIH grant awards from women (due to name changes after marriage), older faculty (who published when PubMed only used initials), and those from ethnic groups that have commonly occurring names. Additionally, we included only clinical departments; further heterogeneity may have been identified if basic sciences departments had been included. The departments included in this analysis have their own subspecialties and further distinctions could be made within each. The differences we observed may be related to differences in primary care versus specialty or differences in subspecialty versus academic focus (teaching, clinical service, research). By aggregating within departments, we may be presenting an underestimation of the true heterogeneity between departments. Lastly, we have no national data for research productivity metrics and were unable to perform significance testing on several of the national data elements—age and time to promotion. Yet, even with these minor data differences, we still find evidence that departmental heterogeneity is not limited to HMS. For example, there are larger percentages of females in pediatrics than in surgery at HMS and nationally.

Significant differences in demographic and professional characteristics and research productivity and advancement metrics across departments at HMS were found. Similarly, departmental differences were found in national AAMC Faculty Roster data. Department heterogeneity is important to recognize and account for in research on faculty workforce development and diversity inclusion in academic medicine. We recommend stratifying or adjusting for department in analyses of academic medicine faculty. For example, in one study, accounting for department characteristics eliminated gender differences in satisfaction with compensation and advancement.[38] Beyond implications for research, these differences are important to recognize in setting expectations for advancement, comparing faculty research productivity, and evaluating workforce development programs. The department differences we have described can be used by mentors to help mentees set expectations for advancement timelines and to understand how their research productivity compares to their colleagues' within their department. These data also highlight that cross-department comparisons of faculty research productivity may yield skewed results. Therefore, faculty should be assessed according to the standards of their own department. This may be an important consideration when evaluating faculty for promotion or when designing and evaluating faculty development programs. Department and institution leadership may use these types of data to identify, examine, and structure administrative policies that address faculty workforce issues such as time to promotion. In addition, our findings suggest that different levels of research productivity may be indicative of department-normative expectations and department-specific ways of structuring work. Department differences are, therefore, important to recognize when making decisions on promotion, tenure, and

allocation of faculty development resources and for understanding faculty turnover. Our results speak broadly to the importance of understanding the context in which faculty work.

## Acknowledgments:

The authors would like to thank Amy Sullivan, Kimberly Boucher, Megan Pasquantonio-Pierce, Ken Huling, and Steve Wimberg for their contributions to data preparation and organization. The authors thank the Association of American Medical Colleges for the provision and use of their Faculty Roster data. The authors would also like to thank the members of the Harvard University Pathways Study Research, Executive, User, and Data Security Advisory Committees for their guidance and thoughtful feedback.

**Funding/Support:**

This work was supported by a National Institutes of Health Directors Pathfinders Award grant 1DP4GM096852 from the National Institute of General Medical Sciences and grant B07-07 from the Josiah Macy Jr. Foundation. E.T. Warner was supported by National Cancer Institute grant 5T32CA009001-36.

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**Table 1**

Demographic and Professional Characteristics Data for 7,304 Faculty in Seven Clinical Departments, Harvard Medical School, May 2011[a]

| Characteristics | Anesthesiology (n = 530) | Medicine (n = 2,979) | Neurology (n = 483) | Pediatrics (n = 930) | Psychiatry (n = 1,139) | Radiology (n = 589) | Surgery (n = 654) | *P* value |
|---|---|---|---|---|---|---|---|---|
| **Race, no. (%)** | | | | | | | | <.0001 |
| URM | 21 (4.0) | 138 (4.6) | 16 (3.3) | 47 (5.1) | 75 (6.6) | 25 (4.2) | 22 (3.4) | |
| White | 365 (68.9) | 2,142 (71.9) | 336 (69.6) | 686 (73.8) | 953 (83.7) | 414 (70.3) | 493 (75.4) | |
| Asian | 128 (24.2) | 599 (20.1) | 109 (22.6) | 159 (17.1) | 90 (7.9) | 135 (22.9) | 117 (17.9) | |
| Other/unknown | 16 (3.0) | 100 (3.4) | 22 (4.6) | 38 (4.1) | 21 (1.8) | 15 (2.6) | 22 (3.4) | |
| **Gender, no. (%)** | | | | | | | | <.0001 |
| Female | 186 (35.1) | 1,173 (39.4) | 174 (36.0) | 475 (51.1) | 583 (51.2) | 188 (31.9) | 172 (26.3) | |
| **Faculty rank, no. (%)** | | | | | | | | <.0001 |
| Full-time instructor | 251 (47.4) | 1,556 (52.2) | 231 (47.8) | 498 (53.6) | 586 (51.5) | 274 (46.5) | 278 (42.5) | |
| Assistant professor | 162 (30.6) | 735 (24.7) | 110 (22.8) | 248 (26.7) | 314 (27.6) | 147 (25.0) | 177 (27.1) | |
| Associate professor | 81 (15.3) | 423 (14.2) | 75 (15.5) | 112 (12.0) | 161 (14.1) | 120 (20.4) | 103 (15.8) | |
| Full professor | 36 (6.8) | 265 (8.9) | 67 (13.9) | 72 (7.7) | 78 (6.9) | 48 (8.2) | 96 (14.7) | |
| **Terminal degree, no. (%)** | | | | | | | | <.0001 |
| Medical degree only | 412 (77.7) | 2,161 (72.5) | 220 (45.6) | 673 (72.4) | 522 (45.8) | 328 (55.7) | 439 (67.1) | |
| Doctorate only | 52 (9.8) | 466 (15.6) | 170 (35.2) | 160 (17.2) | 529 (46.4) | 209 (35.5) | 140 (21.4) | |
| Medical degree and doctorate | 60 (11.3) | 295 (9.9) | 81 (16.8) | 84 (9.0) | 42 (3.7) | 43 (7.3) | 49 (7.5) | |
| Other/unknown | 6 (1.1) | 57 (1.9) | 12 (2.5) | 13 (1.4) | 46 (4.0) | 9 (1.5) | 26 (4.0) | |
| **Age, median (IQR)** | 48 (16) | 46 (17) | 46 (15) | 45 (15) | 50 (20) | 46 (15) | 47 (16) | <.0001 |

Abbreviations: URM indicates underrepresented in medicine; IQR, interquartile range.

[a]Data are from the Pathways data repository, which includes information on demographic and professional characteristics from Harvard Medical School administrative databases.

**Table 2**

Research Productivity and Advancement Metrics for 7,304 Faculty in Seven Clinical Departments, Harvard Medical School, May 2011[a]

| Metrics | Anesthesiology (n = 530) | Medicine (n = 2,979) | Neurology (n = 483) | Pediatrics (n = 930) | Psychiatry (n = 1,139) | Radiology (n = 589) | Surgery (n = 654) | *P* value |
|---|---|---|---|---|---|---|---|---|
| **Number of publications, median (IQR)** | 11.0 (33.0) | 14.0 (48.0) | 23.0 (47.0) | 11.0 (33.0) | 6.0 (24.0) | 27.0 (58.0) | 23.0 (57.5) | <.0001 |
| **H-index, median (IQR)** | 1.0 (3.0) | 3.0 (7.0) | 4.0 (7.0) | 3.0 (5.0) | 1.0 (4.0) | 3.0 (5.0) | 4.0 (5.0) | <.0001 |
| **Second-degree centrality, median (IQR)** | 106 (348.0) | 246.5 (701.0) | 310.0 (630.0) | 200 (557.0) | 59.5 (259.0) | 441.5 (675.5) | 383.0 (682.5) | <.0001 |
| **NIH-funded grant award, no. (%)** [b] | | | | | | | | |
| 1985–2011 | 72 (13.6) | 933 (31.3) | 187 (38.7) | 285 (30.7) | 244 (21.4) | 160 (27.2) | 156 (23.9) | <.0001 |
| 2008–2011 | 41 (7.7) | 544 (18.3) | 108 (22.4) | 154 (16.6) | 114 (10.0) | 99 (16.8) | 76 (11.6) | <.0001 |
| **Time to promotion, median (IQR)** [c] | | | | | | | | |
| Full-time instructor to assistant professor | 6.5 (7.3) | 4.5 (4.6) | 3.8 (3.5) | 5.7 (7.0) | 7.5 (8.8) | 3.5 (2.8) | 3.4 (2.9) | <.0001 |
| Assistant professor to associate professor | 6.0 (3.5) | 6.0 (3.7) | 5.8 (2.7) | 5.8 (2.9) | 6.3 (4.4) | 4.0 (4.0) | 5.3 (3.2) | .0003 |
| Associate professor to full professor | 8.0 (2.6) | 9.1 (5.2) | 8.6 (4.9) | 9.4 (4.5) | 10.2 (5.1) | 9.3 (4.0) | 8.7 (5.3) | .30 |

Abbreviation: NIH indicates National Institutes of Health; IQR, interquartile range.

[a]Data are from the Pathways data repository, which includes information on advancement from Harvard Medical School administrative databases, research productivity from Harvard Catalyst Profiles, and NIH grant awards information from NIH Exporter.

[b]Faculty receiving an NIH-funded grant as principal investigator between the listed years.

[c]Time to promotion (in years) among faculty promoted through May 2011.

**Table 3**

Demographic and Professional Characteristics Data for 91,414 Faculty in Seven Clinical Departments, AAMC Faculty Roster, December 31, 2011[a]

| Characteristics | Anesthesiology (n = 6,831) | Medicine (n = 33,389) | Neurology (n = 4,438) | Pediatrics (n = 17,046) | Psychiatry (n = 9,435) | Radiology (n = 8,295) | Surgery (n = 11,980) | *P* value |
|---|---|---|---|---|---|---|---|---|
| **Race, no. (%)** [b] | | | | | | | | <.0001 |
| URM | 499 (7.3) | 2,425 (7.3) | 211 (4.8) | 1,404 (8.2) | 640 (6.8) | 483 (5.8) | 919 (7.7) | |
| White | 4,149 (60.8) | 19,619 (58.8) | 2,748 (62.0) | 10,803 (63.4) | 5,950 (63.1) | 4,883 (58.9) | 7,737 (64.6) | |
| Asian | 956 (14.0) | 4,920 (14.7) | 577 (13.0) | 1,955 (11.5) | 701 (7.4) | 1,361 (16.4) | 1,441 (12.0) | |
| Multiple/other/unknown | 1,223 (17.9) | 6,399 (19.2) | 899 (20.3) | 2,875 (16.9) | 2,134 (22.6) | 1,557 (18.8) | 1,876 (15.7) | |
| **Gender, no. (%)** [b] | | | | | | | | |
| Female | 2,300 (33.7) | 11,627 (34.8) | 1,512 (34.1) | 8,625 (50.6) | 4,233 (44.9) | 2,275 (27.5) | 2,380 (19.9) | <.0001 |
| **Faculty rank, no. (%)** | | | | | | | | |
| Full-time instructor | 918 (13.4) | 4,065 (12.2) | 459 (10.3) | 1,965 (11.5) | 1,256 (13.3) | 821 (9.9) | 910 (7.6) | <.00001 |
| Assistant professor | 3,455 (50.6) | 14,587 (43.7) | 1,840 (41.5) | 7,904 (46.4) | 4,396 (46.6) | 3,799 (45.8) | 5,022 (41.9) | |
| Associate professor | 1,290 (18.9) | 6,723 (20.1) | 891 (20.1) | 3,489 (20.5) | 1,725 (18.3) | 1,663 (20.0) | 2,672 (22.3) | |
| Full professor | 1,006 (14.7) | 7,287 (21.8) | 1,156 (26.0) | 3,483 (20.4) | 1,893 (20.1) | 1,807 (21.8) | 3,193 (26.7) | |
| Other | 162 (2.4) | 727 (2.2) | 92 (2.1) | 205 (1.2) | 165 (1.7) | 205 (2.5) | 183 (1.5) | |
| **Terminal Degree, no. (%)** | | | | | | | | <.0001 |
| Medical degree only | 5,580 (81.7) | 25,828 (77.4) | 2,770 (62.4) | 13,230 (77.6) | 4,967 (52.6) | 5,591 (67.4) | 9,322 (77.8) | |
| Doctorate only | 387 (5.7) | 4,147 (12.4) | 893 (20.1) | 2,025 (11.9) | 3,463 (36.7) | 1,821 (22.0) | 1,336 (11.2) | |
| Medical degree and doctorate | 495 (7.2) | 2,543 (7.6) | 669 (15.1) | 1,043 (6.1) | 532 (5.6) | 584 (7.0) | 873 (7.3) | |
| Other or unknown | 369 (5.4) | 871 (2.6) | 106 (2.4) | 748 (4.4) | 473 (5.0) | 299 (3.6) | 449 (3.7) | |
| **Age, median (IRQ)** [c] | 47 (17) | 47 (17) | 48 (16) | 47 (17) | 49 (18) | 47 (18) | 47 (16) | |

Abbreviations: AAMC indicates Association of American Medical Colleges; URM, underrepresented in medicine; IQR, interquartile range.

[a]Data on race, gender, faculty rank, and terminal degree are from the AAMC Faculty Roster. Data on age are from an AAMC Faculty Roster snapshot that was a special request; the snapshot was prepared on March 31, 2013. The AAMC Faculty Roster includes data on paid faculty at 141 accredited U.S. medical schools.

[b]Data on race and gender exclude 127 faculty members with missing gender information.

[c]Data on age include an additional 1,647 faculty members; see Table 4 for the number of faculty by discipline.

**Table 4**

Advancement Metrics for 93,061 Faculty in Seven Clinical Departments, AAMC Faculty Roster, December 31, 2011[a]

| Metrics | Anesthesiology (n = 7,006) | Medicine (n = 34,252) | Neurology (n = 4,540) | Pediatrics (n = 17,275) | Psychiatry (n = 9,430) | Radiology (n = 8,306) | Surgery (n = 12,252) |
|---|---|---|---|---|---|---|---|
| Full-time instructor to assistant professor, median (IQR)[b] | 2.5 (3.6) | 3.0 (2.8) | 2.4 (2.5) | 3.0 (3.0) | 3.0 (3.5) | 2.5 (3.3) | 2.3 (2.5) |
| Assistant professor to associate professor, median (IQR)[b] | 6.7 (3.4) | 6.3 (3.0) | 6.1 (3.0) | 6.8 (3.1) | 6.6 (3.4) | 6.0 (3.0) | 6.0 (2.3) |
| Associate professor to full professor, median (IQR)[b] | 6.7 (4.0) | 7.0 (4.0) | 6.5 (4.0) | 7.0 (4.5) | 7.0 (5.0) | 6.0 (3.8) | 6.0 (3.3) |

Abbreviation: AAMC indicates Association of American Medical Colleges; IQR, interquartile range.

[a]Data on advancement metrics are from an AAMC Faculty Roster snapshot generated via was a special request; the snapshot was prepared on March 31, 2013. The AAMC Faculty Roster includes data on paid faculty at 141 accredited U.S. medical schools (N = 91,414). Data on advancement metrics include an additional 1,647 faculty members.

[b]Time to promotion (in years) among faculty promoted through December 31, 2011.